

# Bureau of Freshwater Fisheries

**Bob Soldwedel, Chief**

The Bureau of Freshwater Fisheries is responsible for the protection and management the state's freshwater fish resources and their fisheries.

Management activities of our anadromous American shad populations included the haulseine sampling of the downstream migrating juveniles of the 1998 year class, and a census of the upstream returning adults in 1999 on the Delaware River by the use of hydroacoustics. The count of the spawning adults was very low as it was only about 10 percent of the 1998 estimate. What effect the low flows in 1999 had on the poor spawning run is unknown.

On the Raritan River we made a continuous video surveillance in April, May and June of the American shad and other species passing upstream through the fishway on the Island Farm Dam at Bridgewater. On the Maurice River at the Union Lake fish ladder, we cooperated with the U.S. Fish and Wildlife Service and PSE&G to provide them with a number of pre-spawned blueback herring for them to seed an impoundment on the Cooper River and Sunset Lake.

For New Jersey's trout fisheries management, a major project was the three month creel census at Round Valley Reservoir designed to determine the extent of the catch and release fishery and the harvest of lake, brown and rainbow trout.

At Lake Hopatcong, a tagging study of spring stocked trout was initiated to gain information on trout harvest and holdover. The objective is to determine the composition of the fishery in terms of immediate harvest and holdover. This study is based on an evaluation of the lake's trout water potential to manage the lake for a seasonal put-and-take trout fishery and is not yet completed.

In our streams, a continuing stocking program of brown trout into the tidal Manasquan River to establish a sea run fishery took place again this year. Our outreach program to the anglers of the state is paying off as a number of sea runs up to six-plus pounds have been reported.

In the warmwater/coolwater area, the bureau conducted a mark and recapture study of walleyes in Swartswood Lake to obtain a population estimate. An estimate of 1,906 walleyes greater than 12 inches in length was finalized. To evaluate the effects of the Lunker Bass regulation on Lake Assunpink and Parvin Lake, which have now been in place several years, night electrofishing was done to obtain estimates on the size structure of the largemouth bass.

In both locations, a high percentage of bass over 15 inches shows that the regulation is effective. Bass fishing tournament results at Assunpink Lake confirm that the catch of bass over 15 inches is high. As a result of our success with the Lunker Bass program, two other waters, Ryker Lake and Delaware Lake were judged to be capable of supporting a 15 inch minimum size limit on bass and were recommended for the program. In addition, the population of large sized sunfish at Ryker Lake was judged to be at risk now that the lake is fully opened to the public, so a seven inch size limit and a restrictive creel limit were also recommended.

During this fiscal year the fishery biologist staff completed the Fishery Management Plans for the following waters: Ryker Lake (Sussex), Delaware Lake (Warren), White Lake (Warren), Lefferts (Monmouth), Prospertown Lake (Ocean) and Sunset Lake (Cumberland ).

A major event in our habitat protection activities was a workshop entitled "Restoring our Streams" in which the bureau played a leading role along with a number of private and governmental groups. Approximately 60 individuals learned about stream ecology and dynamics as well as bio-engineering and in-stream and fish habitat enhancement techniques.

Considerable time was spent on inspecting and trying to minimize the degradation of a number of waters that were being impacted by physical development. Primary of these waters were Primrose Brook (Morris), Flanders Brook (Morris), Masons Run (Camden), Mulhocaway Creek (Hunterdon ) and Prescott Brook (Hunterdon).

An important ongoing program of this bureau is the classification of our waters for their trout habitat status to maximize water quality protection. Seventeen electrofishing surveys were completed, recommendations provided to the Division of Watershed Management on seven stream or stream

segments and maps were adjusted. The report "Classification of New Jersey Trout Waters as Related to Their Suitability for Trout" was updated.

Through a grant administered by the U.S. National Fish and Wildlife Foundation, 425 Christmas tree fish shelters were constructed and placed in Spruce Run Reservoir, making a total of 850 since last year. Volunteer labor was received from New Jersey BASS, with the Town of Clinton assisting in tree collection.



**SUMMATION OF ALL SPECIES DISTRIBUTED FROM THE  
HACKETTSTOWN STATE FISH HATCHERY IN 1999**

Species	Number	Average Length (inches)	Range (inches)
Bluegill Sunfish			
Fingerlings	25,350	1.5	1.0-2.0
Adults	9,600	5.6	4.0-7.8
Channel Catfish			
Fry	401,325	—	—
Fingerlings	67,483	2.5	1.6-5.2
Adv. Fingerlings	47,413	5.8	4.8-7.1
Adults	100	26.0	18.0-34.0
Fathead Minnows	59,750	1.0	.5-2.0
Black Crappie	440	7.3	5.0-8.6
Lake Trout	3,156	6.7	5.5-7.7
Largemouth Bass	9,150	2.1	1.4-2.7
Mosquitofish	117,985	—	—
Muskellunge			
Fry	108,320	—	—
Fingerlings	2,328	3.2	2.6-3.7
Adv. Fingerlings	5,521	9.8	6.8-13.4
Smallmouth Bass			
Fingerlings	43,885	1.5	1.3-1.6
Adv. Fingerlings	210	5.0	4.0-6.0
Adults	100	14.0	12.0-18.0
Tiger Muskies			
Fry	189,260	—	—
Fingerlings	12,400	2.0	1.5-3.2
Adv. Fingerlings	9,893	8.3	5.0-11.5
Walleye			
Fingerlings	133,223	1.7	1.4-2.9
Adv. Fingerlings	32,730	4.1	2.5-9.9
Northern Pike			
Fry	284,235	—	—
Fingerlings	36,480	4.2	2.5-5.8
Hybrid Striped Bass	24,910	3.2	2.0-4.0
<b>TOTAL</b>	<b>1,625,247</b>		

**PEQUEST TROUT HATCHERY  
STOCKING SUMMARY  
SPRING, 1999**

	Number	Pounds	Length (inches)
Rainbow trout—Total	239,473	103,668	—
Production stock	237,998	102,045	10.6
Brood stock	1,475	1,623	13.5
Brown trout— Total	125,220	62,728	—
Production stock	123,205	58,007	10.5
Brood stock	2,015	4,721	17.3
Brook trout— Total	231,110	105,267	—
Production stock	229,440	100,850	10.5
Brood stock	1,670	4,417	17.9

**TOTAL: 595,803 TROUT  
271,663 LBS.\***

\*Additional 4,415 pounds of surplus trout stocked at 6.1 inches in May.

